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EXAMINER

LOVEL, KIMBERLY M

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| ART UNIT | PAPER NUMBER |
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2167

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08/09/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/796,644

Applicant(s)

MEREDITH ET AL.

Examiner

Kimberly Lovel

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. This communication is in response to the Amendment filed 29 March 2007.
2. Claims 1-12 and 14-24 are pending in the current application. In the Amendment filed 29 March 2007, claims 1 and 14 were amended and claims 13 and 25 were canceled. This Amendment is made Non-Final.
3. The prior art rejections stated in the Office Action mailed 23 February 2007 have been withdrawn as necessitated by applicants' arguments.

***Claim Rejections - 35 USC § 101***

4. The rejection of **claims 1-13** under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter have been withdrawn as necessitated by amendment.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**5. Claims 1-6, 9-12, 14-18 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,584,464 to Warthen (hereafter Warthen) in view of US PGPub 2004/0199498 to Kapur et al (hereafter Kapur) in view of US PGPub 2004/0243568 to Wang et al (hereafter Wang).**

Referring to claim 1, Warthen discloses a method of compressing a log of linguistic data (see column 4, lines 65-66), the log having a plurality of linguistic help query strings [questions] (see column 4, lines 38-41), each string being including at least two tokens [i.e., Where can I find information on the sport bicycling?] (see column 4, lines 32-36). However, Warthen fails to explicitly disclose the further limitations of the actual steps taken to compress the log. Kapur discloses receiving various query log files from various sources and then processing the logs (see [0035], lines 1-8), including the further limitations of:

applying a compression operation [canonicalized] to each string (see [0036], lines 3-5);

identifying two strings that match each other after the compression operation [consolidate] (see Fig 5, step 510); and

removing one of the two matching strings from the log [multiple occurrences of the same query are included as a single query] (see [0035], lines 10-13).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the query processing engine disclosed by Kapur to compress the log of questions disclosed by Warthen. One would have been motivated to do so in order to produce a set of questions which improve the process of determining the context of a user query and then associating the most useful result with the query (Warthen: see column 1, lines 43-51) in order to produce a set of questions which improve the process of determining the context of a user query and then associating the most useful result with the query.

The combination of Warthen and Kapur (hereafter Warthen/Kapur) fails to explicitly disclose the further limitation of training a statistical process with the log. Wang discloses logging queries in a log database, including the further limitation of training a statistical process [FAQ matcher] with the log (see [0049]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the compressed log of Warthen/Kapur to train a statistical process as disclosed by Wang since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. One would have been motivated to do so in order to increase search providers in

understanding user intent and providing optimal search results and content to querying users (Kapur: see [0005] and [0006]).

**Referring to claim 2**, the combination of Warthen/Kapur and Wang (hereafter Warthen/Kapur/Wang) discloses the method of claim 1, wherein the log is a log of user-initiated inputs [users' questions] to a help interface [client interface] (Warthen: see column 3, lines 59-67).

**Referring to claim 3**, Warthen/Kapur/Wang discloses the method of claim 2, wherein each string is a query relative to a help function (Warthen: see column 3, lines 59-67).

**Referring to claim 4**, Warthen/Kapur/Wang discloses the method of claim 3, wherein each help-related query is relative to a computer system [corporate network answering employee questions] (Warthen: see column 3, lines 59-67).

**Referring to claim 5**, Warthen/Kapur/Wang discloses the method of claim 1, wherein the compression operation is character-based [removing odd symbols] (Kapur: see [0039]-[0048]).

**Referring to claim 6**, Warthen/Kapur/Wang discloses the method of claim 1, wherein the compression operation is token-based (Kapur: see [0036], lines 23-28).

**Referring to claim 9**, Warthen/Kapur/Wang discloses the method of claim 1, and further comprising:

applying a second compression operation [tokenized] to each string (Kapur: see [0036], lines 23-28);

determining if any two strings match each other after the second compression operation [convergence] (Kapur: see [0038], lines 1-2); and

removing one of the two matching strings from the log (see [0038], lines 5-6).

**Referring to claim 10**, Warthen/Kapur/Wang discloses the method of claim 9, wherein the first compression operation is character-based [canonicalize – item 500] and the second compression operation is token based [tokenize – item 520] (Kapur: see Fig 5).

**Referring to claim 11**, Warthen/Kapur/Wang discloses the method of claim 10, and further comprising applying subsumption [Generation of Extensions, Associations and Alternatives – items 570, 580 and 590] after the second compression operation [tokenize] is complete (Kapur: see Fig 5).

**Referring to claim 12**, Warthen/Kapur/Wang discloses the method of claim 11, wherein the subsumption operation is repeated for the log [the log would be processed by the processing engine one more time] (Kapur: see [0035], lines 3-8).

**Referring to claim 14**, Warthen discloses a system for compressing a query log having a plurality of linguistic help query strings [questions] (see column 4, lines 38-41 and 65-66), each string having a plurality of tokens [i.e., Where can I find information on the sport bicycling?] (see column 4, lines 32-36). However, Warthen fails to explicitly disclose the further limitations of the actual steps taken to compress the log. Kapur discloses receiving various query log files from various sources and then processing the logs (see [0035], lines 1-8), including the further limitations of:

an input for receiving a raw query log (see [0035], lines 3-8);

memory [memory or database file 310] for storing the raw query log (see [0035], lines 19-31);

a processor [query processing engine 300] (see Fig 3) for applying at least one compression operation [canonicalized] to each string (see [0036], lines 3-5), and for scanning the modified strings to determine if any match each other [consolidate] (see Fig 5, step 510) so that one of the matching strings can be removed (see [0035], lines 10-13); and

wherein the processor is configured to utilize the compressed query log once the removal is complete (see [0025]) in order to produce a set of questions which improve the process of determining the context of a user query and then associating the most useful result with the query.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the query processing engine disclosed by Kapur to compress the log of questions disclosed by Warthen. One would have been motivated to do so in order to produce a set of questions which improve the process of determining the context of a user query and then associating the most useful result with the query (Warthen: see column 1, lines 43-51).

Warthen/Kapur fails to explicitly disclose the further limitation wherein the processor is configured to utilize the query log to train a statistical process. Wang discloses logging queries in a log database, including the further limitation wherein the processor is configured to utilize the query log to train a statistical process [FAQ matcher] (see [0049]).



It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the compressed log of Warthen/Kapur to train a statistical process as disclosed by Wang since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. One would have been motivated to do so in order to increase search providers in understanding user intent and providing optimal search results and content to querying users (Kapur: see [0005] and [0006]).

**Referring to claim 15**, Warthen/Kapur/Wang discloses the system of claim 14, wherein each string is a query relative to a help function (Warthen: see column 3, lines 59-67).

**Referring to claim 16**, Warthen/Kapur/Wang discloses the system of claim 15, wherein each help-related query is relative to a computer system [corporate network answering employee questions] (Warthen: see column 3, lines 59-67).

**Referring to claim 17**, Warthen/Kapur/Wang discloses the system of claim 14, wherein the compression operation is character-based [removing odd symbols] (Kapur: see [0039]-[0048]).

**Referring to claim 18**, Warthen/Kapur/Wang discloses the system of claim 14, wherein the compression operation is token-based (Kapur: see [0036], lines 23-28).

**Referring to claim 21**, Warthen/Kapur/Wang discloses the system of claim 14, and further comprising:

applying a second compression operation [tokenized] to each string (Kapur: see [0036], lines 23-28);

determining if any two strings match each other after the second compression operation [convergence] (Kapur: see [0038], lines 1-2); and

removing one of the two matching strings from the log (see [0038], lines 5-6).

**Referring to claim 22**, Warthen/Kapur/Wang discloses the system of claim 21, wherein the first compression operation is character-based [canonicalize – item 500] and the second compression operation is token based [tokenize – item 520] (Kapur: see Fig 5).

**Referring to claim 23**, Warthen/Kapur/Wang discloses the system of claim 22, and further comprising applying subsumption [Generation of Extensions, Associations and Alternatives – items 570, 580 and 590] after the second compression operation [tokenize] is complete (Kapur: see Fig 5).

**Referring to claim 24**, Warthen/Kapur/Wang discloses the system of claim 23, wherein the subsumption operation is repeated for the log [the log would be processed by the processing engine one more time] (Kapur: see [0035], lines 3-8).

**6. Claims 7, 8, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,584,464 to Warthen (hereafter Warthen) in view of US PGPub 2004/0199498 to Kapur et al (hereafter Kapur) in view of US PGPub 2004/0243568 to Wang et al (hereafter Wang) as applied to claims 1 and 14 above respectively, and further in view of US Patent No 6,493,721 to Getchius et al (hereafter Getchius).**

**Referring to claim 7,** Warthen/Kapur/Wang disclose a compression operation, however, Warthen/Kapur/Wang fail to explicitly disclose the further limitation wherein the compression operation is subsumption. Getchius discloses optimizing search queries (see abstract), including the further limitation of subsumption (see column 24, lines 7-22).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the concept of subsumption as disclosed by Getchius as the type of compression performed by Warthen/Kapur/Wang. One would have been motivated to do so in order to increase the accuracy of determining if two strings are duplicates.

**Referring to claim 8,** Warthen/Kapur/Wang/Getchius discloses the method of claim 7, wherein subsumption includes applying an impossibility condition to selectively compute edit distance [edit distance d] (Kapur: see [0048], lines 13-31).

**Referring to claim 19,** the claim is rejected on the same grounds as claim 7.

**Referring to claim 20,** Warthen/Kapur/Wang/Getchius discloses the system of claim 19, wherein subsumption includes applying an impossibility condition to selectively compute edit distance [edit distance d] (Kapur: see [0048], lines 13-31).

***Response to Arguments***

7. Applicant's arguments with respect to claims 1-12 and 14-24 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2167

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Lovel  
Examiner  
Art Unit 2167

4 August 2007  
kml

*Kuen S. Lu*  
*(Temporary) Primary Examiner*